

# ABSTRACT

This invention provides stiffness-taper tubing and a manufacturing method and apparatus for such, in which the bonding strength in the transition section between resins having different stiffness is increased, and where the length of the transition section is shortened and operability is improved, and furthermore where the volume of residual resin when switching resins is reduced as well as the degradation of the quality of residual resin due to heating is suppressed.

Apparatus 1 for manufacturing stiffness-taper tubing comprising a die 3 having an extrusion hole 2, a die holder 4 for holding said die 3, and a mandrel 5 which is mounted inside said die holder 4 and fits in said extrusion hole 2, and where a plurality of resin-supply ports 8, 9 are formed in said die holder 4, and a mandrel insertion hole 6 that connects to said extrusion hole 2 is formed in said die holder 4 and said mandrel 5 is mounted in this mandrel insertion hole 6, and where said resin-supply ports 8, 9 open up to a cylindrical space 7 that is formed between the inner surface of said mandrel insertion hole 6 and the outer surface of said mandrel 5 at a position that is separated from the extrusion hole 2 in said die 3, and where the plurality of resins flow together in this cylindrical space 7.

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